PATENT
Attorney Reference Number 5437-58514-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Scarborough et al.

Application No. 09/922,197

Filed: August 2, 2001

Confirmation No. 7893

For: ELECTRONIC EMPLOYEE SELECTION
SYSTEMS AND METHODS

Examiner: Joseph P. Hirl

Art Unit: 2121

Attorney Reference No. 5437-58514-01

MAIL STOP AMENDMENT
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TRANSMITTAL LETTER

Enclosed for filing in the above application are the following:

☒   Letter
☒   Copy of Amendment previously submitted on January 24, 2005 and accompanying CD-ROM

☒   No fee is required because fees were paid when the amendment was previously submitted.

☒   If the Patent and Trademark Office determines that in an additional fee is required, please charge the fee to Deposit
Account No. 02-4550. A copy of this sheet is enclosed.

☒   Please return the enclosed postcard to confirm that the items listed above have been received.

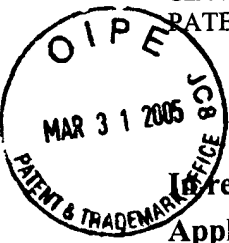Respectfully submitted,

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LETTER

Applicants hereby respond to the Office Action mailed March 18, 2005, and request reconsideration.

Regarding the missing pages of the response, Applicants submit herewith a photocopy of the response previously filed on January 24, 2005.

Applicants wish to cooperate with the Examiner to resolve the Information Disclosure Statement issue. Copies of the non-patent literature documents were sent with the earlier response. Many of the documents are brief (1-3 page) web pages. Applicants also submitted a CD-ROM containing three videos for consideration by the Examiner. A second copy of the CD-ROM is included herewith. Applicants are happy to work with the Examiner to deliver a copy of the CD-ROM if it is otherwise unavailable. For example, Applicants can send a copy by UPS to the Group Receptionist or take other action as requested by the Examiner.

Respectfully submitted,

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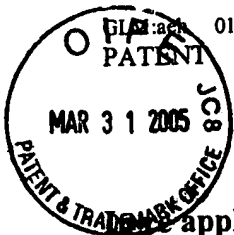
Attorney Reference No. 5437-58514-01

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to
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Attorney
for Applicant(s)_____

Date Mailed ___January 24, 2005___

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AMENDMENT/RESPONSE

In response to the Office Action dated August 24, 2004, please amend the above-referenced Application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2.

Amendments to the Drawings begin on page 10, and include the attached replacement sheet.

Remarks begin on page 11.

In the Claims:

Please amend the claims as follows and cancel claims 1, 2, 4, 6, 8-17, 19-22, 24-34, and 38-54 without prejudice to pursuit in a continuation patent application.

1.   (Canceled)

2.   (Canceled)

3.   (Currently Amended) ~~An apparatus according to claim 1~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator operable to present a first set of a plurality of questions to the individual;

an electronic answer capturer operable to electronically store the individual's responses to at least a selected plurality of the first set of questions presented to the individual;

an electronic predictor responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

wherein the post-hire outcome indicates whether the individual is predicted to be involuntarily terminated.

4.   (Canceled)

5.   (Currently Amended) ~~An apparatus according to claim 1~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator operable to present a first set of a plurality of questions to the individual;

an electronic answer capturer operable to electronically store the individual's responses to at least a selected plurality of the first set of questions presented to the individual;

an electronic predictor responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

wherein at least one of the predicted outcomes is a predicted probability that a particular outcome value range will be observed.

6.   (Canceled)

7.   (Currently Amended) ~~An apparatus according to claim 1~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator operable to present a first set of a plurality of questions to the individual;

an electronic answer capturer operable to electronically store the individual's responses to at least a selected plurality of the first set of questions presented to the individual;

an electronic predictor responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

wherein the predicted outcome is a predicted range of values for a continuous variable.

8.   (Canceled)

9.   (Canceled)

10.   (Canceled)

11.   (Canceled)

12.   (Canceled)

13.   (Canceled)

14.   (Canceled)

15.   (Canceled)

16.   (Canceled)

17.   (Canceled)

18.   (Currently Amended) ~~An apparatus according to claim 15~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator operable to present a first set of a plurality of questions to the individual;

an electronic answer capturer operable to electronically store the individual's responses to at least a selected plurality of the first set of questions presented to the individual;

an electronic predictor responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

wherein the data interrogator is located at a first location and the predictor is located at a second location which is remote from the first location;

wherein the data interrogator and the predictor are selectively electronically interconnected through a network; and

wherein the network is a satellite network.

19.   (Canceled)

20.   (Canceled)

21.   (Canceled)

22.   (Canceled)

23.   (Currently Amended) ~~An apparatus according to claim 22~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator operable to present a first set of a plurality of questions to the individual;

an electronic answer capturer operable to electronically store the individual's responses to at least a selected plurality of the first set of questions presented to the individual;

an electronic predictor responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

in which the predictor comprises at least one model which provides a predictor of the probability of the individual exhibiting at least one of the predicted outcomes, the model being based on correlations between the at least one of the predicted outcomes and the answers to questions by the other individuals, including answers by at least some employees of the employer, the model taking at least selected answers of the stored answers as inputs to the model, a probability of the individual exhibiting the at least one of the predicted outcomes being provided as an output of the model; and

wherein the model comprises at least one neural network.

24.   (Canceled)

25.   (Canceled)

26.   (Canceled)

27.   (Canceled)

28.   (Canceled)

29.   (Canceled)

30.   (Canceled)

31.   (Canceled)

32.   (Canceled)

33.   (Canceled)

34.   (Canceled)

35.   (Currently Amended) ~~The method of claim 34~~ A computer-implemented method of predicting employment performance characteristics for a candidate employee based on pre-hire information collected for hired employees, the method comprising:

collecting data indicating pre-hire information for a plurality of the hired employees;

collecting data indicating post-hire outcomes for the hired employees;

constructing an artificial intelligence-based model from the pre-hire information and the post-hire outcomes for the employees;

from the candidate employee, electronically collecting data indicating pre-hire information of the candidate employee; and

applying the model to the collected pre-hire information of the candidate employee to generate one or more predicted post-hire outcomes for the candidate employee;

wherein constructing the model comprises:

constructing a plurality of proposed models, wherein at least two of the models are of different types; and

selecting a superior proposed model out of the plurality of proposed models as the model to be used; and

wherein at least two of the proposed models are different neural network types.

36.   (Original) The method of claim 35 wherein the two proposed models are both feed-forward neural networks.

37.   (Original) The method of claim 35 wherein the two proposed models are chosen from the following:

back propagation, conjugate gradients, quasi-Newton, Levenberg-Marquardt, quick propagation, delta-bar-delta, linear, radial basis function, and generalized regression network.

38-54   (Canceled)

55.   (New) One or more computer-readable media having computer-executable instructions for performing the method of claim 35.

56.   (New) One or more computer-readable media having computer-executable instructions for performing the method of claim 36.

57.   (New) One or more computer-readable media having computer-executable instructions for performing the method of claim 37.

58.   (New) An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

an electronic data interrogator means operable to present a first set of a plurality of question means to the individual;

an electronic answer capturer means operable to electronically store the individual's responses to at least a selected plurality of the first set of question means presented to the individual;

an electronic predictor means responsive to the stored answers and operable to predict at least one post-hire outcome if the individual were to be employed by the employer, the predictor means providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of questions by other individuals for which post-hire information has been collected; and

an electronic results provider means providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer;

wherein the post-hire outcome indicates whether the individual is predicted to be involuntarily terminated.

Amendments to the Drawings:

The attached sheet of drawings includes changes to FIG. 17. This sheet replaces the

original drawing sheet for FIG. 17.

Attachment: Replacement sheet (FIG. 17)

Remarks:

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 3, 5, 7, 18, 23, 35-37, and 55-58 are pending in the application. No claims have been allowed. Claims 3, 5, 7, 18, 23, 35, and 58 are independent.

Presentation of Claims Defining Same Patentable Invention

37 CFR § 604(b) requires Applicants to identify any patent applications defining the same patentable invention as the present application. Various of the claims that were originally presented in this application were copied by Applicant Dewar into Dewar's U.S. Patent Application No. 10/410,307. However, these copied claims have now been canceled without prejudice to pursuit in a continuation patent application.

As understood by Applicants, the present claims have not been copied into any Dewar patent application. Further, the deadline for copying claims 3, 5, 7, 18, 23, and 35-37 has now passed.

Objection to Drawing

The Action objects to Fig. 17, asserting that it is prior art. Applicants have amended the drawing accordingly.

Cited Art

U.S. Patent No. 5,722,418 to Bro ("Bro") is entitled "Method for Mediating Social and Behavioral Processes in Medicine and Business through an Interactive Telecommunications Guidance System."

Double Patenting Rejection

Claims 25, 30, 45, 51, 52, and 53 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over U.S. Patent Application No. 09/921,993 (hereafter the '993 patent application). Applicants respectfully disagree, and submit that the claims each recite language that would not be suggested by the claims of the '993 patent. However, the rejected claims (25, 30, 45, 51, 52, and 53) have now been canceled, so the rejection is moot.

Canceled Claims

To better focus prosecution, Applicants have canceled many of the claims and amended claims 3, 5, 7, 18, 23, and 35-37 to independent form, including any language in claims from which the claims depended, directly or indirectly. Such amendments are not made for reasons related to patentability.

Patentability of Claim 34 under 112 ¶ 2

Claim 34 was rejected as unpatentable under 112 ¶ 2 as indefinite. Specifically, the Action objected to the term "superior" as relative. The language of claim 34 is now found in claim 35. For clarification, the claim now reads "superior proposed model out of the plurality of proposed models." The claim now clearly sets forth its metes and bounds. (*See*, MPEP 2173.05(b) – F. "Other Terms").

Patentability of Claims 3, 5, 7, 18, 23, and 35-37 over Bro under § 102(b)

The Action rejects claims 1-54 under 35 U.S.C. § 102(b) as being anticipated by Bro. Applicants respectfully submit the claims in their present form are allowable over the cited art. For a 102(b) rejection to be proper, the cited art must show each and every element as set forth in a claim. (*See* MPEP § 2131.01.) However, the cited art does not so show, for reasons set forth for each claim, below.

Claim 3

Bro's description of "change in current condition" does not anticipate claim 3's recitation of "involuntarily terminated." Claim 3 recites "wherein the post-hire outcome indicates whether the individual is predicted to be involuntarily terminated." The Action rejects claim 3 over Bro, but Applicants respectfully disagree.

At column 38, lines 14-20, Bro describes:

> Another distinct operation may involve actuation of a printer 32 to provide documents in relation to the operating format, or as for providing award certificates or coupons to isolated clients 50 or patients. The subject invention in this enhancement thus allows a subset of clients 50 or individuals to be isolated with respect to need, infirmity, disease, psychological attribute, or change in current condition.

Thus, Bro describes "change in current condition." However, one of skill in the art could not be expected to surmise "involuntarily terminated" from mere mention of "change in current condition."

As understood by Applicants, Bro does not contemplate "involuntarily terminated" for any purpose, so it could not possibly anticipate "predicted to be involuntarily terminated" as recited by claim 3. Elsewhere, at col. 37, lines 30 et seq., Bro mentions "The software's 16D ability to approximate or guess the patient's or client's 50 choice or answer based upon prior performance . . ." However, Applicants do not find that Bro describes predicting a change in current condition, let alone "predicted to be involuntarily terminated."

For at least these reasons, claim 3 is allowable over Bro.

Claim 5

Bro's description of "change in current condition" does not anticipate claim 5's recitation of "predicted probability that a particular outcome value range will be observed." Claim 5 recites "wherein at least one of the predicted outcomes is a predicted probability that a particular outcome value range will be observed." The Action rejects claim 5 over Bro, but Applicants respectfully disagree.

At column 36, lines 14-20, Bro describes:

> Another distinct operation may involve actuation of a printer 32 to provide documents in relation to the operating format, or as for providing award certificates or coupons to isolated clients 50 or patients. The subject invention in this enhancement thus allows a subset of clients 50 or individuals to be isolated with respect to need, infirmity, disease, psychological attribute, or change in current condition.

Thus, Bro describes "change in current condition." However, one of skill in the art could not be expected to surmise "probability that a particular outcome value range will be observed" from "change in current condition." Finally, even if "change in current condition" were to somehow suggest the recited language, the passage is insufficient to anticipate "probability that a particular value range will be observed" as recited by claim 5. For at least these reasons, claim 5 is allowable over Bro.

Claim 7

Bro's description of "continuous state of growth" and "continuous daily monitoring" does not anticipate claim 7's recitation of "predicted range of values for a continuous variable."

Claim 7 recites "wherein the predicted outcome is a predicted range of values for a continuous variable." The Action rejects claim 7 over Bro, but Applicants respectfully disagree.

At column 13, lines 40-49, Bro describes:

> The rationale of the system is that the man is in a continuous state of growth and development. The system provides the motivation and reinforcement through continuous daily monitoring of each patient as he works towards his basic goals for optimal health by maintaining prescribed regimens or goals. By this daily or periodic reinforcement and guidance utilizing interactive feedback, the system is able to maintain the organization and intervention between the physician, counselor, manager, the patient, or employee and his or her goals.

Thus, Bro describes "continuous state of growth" and "continuous daily monitoring." However, one of skill in the art could not be expected to surmise "continuous variable" from such language. Finally, even if the language were to somehow suggest "continuous variable," the passage is insufficient to anticipate "predicted range of values for a continuous variable" as recited by claim 7. For at least these reasons, claim 7 is allowable over Bro.

Claim 18

Bro's description of "wide area asynchronous transfer mode network" does not anticipate claim 18's recited "satellite network." Claim 18 recites "wherein the data interrogator and the predictor are selectively electronically interconnected through a network; wherein the network is a satellite network." The Action rejects claim 18 over Bro, but Applicants respectfully disagree.

At column 18, lines 31 et seq., Bro describes:

> Moreover, unlike other transfer modes, an asynchronous transfer mode provides two further benefits: (1) it positions local area networks for future multimedia applications if they appear when more patients or employees are added to the system, and (2) it seamlessly integrates local traffic into the future wide area asynchronous transfer mode network.

Applicants fail to find the term "satellite network." Thus, Applicants believe a 102(b) rejection is improper and should be withdrawn.

For at least these reasons, claim 18 is allowable over Bro.

Claim 23

Bro's description of "more rapid response utilizing neural network and expert system software" does not anticipate claim 23's recitation of "the model comprises at least one neural network . . . the model being based on correlations between . . . predicted outcomes and the answers to questions by the other individuals." Claim 23 recites "wherein the model comprises

at least one neural network" and that "the model being based on correlations between . . .

predicted outcomes and the answers to questions *by the other individuals*." The Action rejects

claim 23 over Bro, but Applicants respectfully disagree.

> At column 37, lines 26 et seq., Bro describes:

> > The software 16D of the subject invention as it coordinates the various
> > components possesses an editing capability for elimination of "dead time,"
> > thereby minimizing the annoyance to the patient or client 50 and consequent non
> > response. The software's 16D ability to approximate or guess the patient's or
> > client's 50 choice or answer based upon prior performance provides the
> > opportunity for more rapid response utilizing neural network and expert system
> > software.

Thus, Bro describes "ability to approximate or guess the patent's or client's 50 choice or answer

based upon prior performance provides the opportunity for more rapid response utilizing neural

network . . . software." However, one or skill in the art could not be expected to surmise "the

model comprises at least one neural network" wherein the model is "based on correlations

between the at least one of the predicted outcomes and the answers to questions by other

individuals" as recited by claim 23 from the mere mention of "utilizing neural network" and

"based upon prior performance."

> For at least these reasons, claim 23 is allowable over Bro.

Claims 35-37

> *Bro's description of "neural network" does not anticipate claim 35's recitation of*

"different neural network types." Claim 35 recites "wherein at least two of the proposed models

are different neural network types." The Action rejects claim 35 over Bro, but Applicants

respectfully disagree.

> At column 37, lines 26 et seq., Bro describes:

> > The software 16D of the subject invention as it coordinates the various
> > components possesses an editing capability for elimination of "dead time,"
> > thereby minimizing the annoyance to the patient or client 50 and consequent non
> > response. The software's 16D ability to approximate or guess the patient's or
> > client's 50 choice or answer based upon prior performance provides the
> > opportunity for more rapid response utilizing neural network and expert system
> > software.

Thus, Bro describes "neural network." However, one or skill in the art could not be expected to

surmise "the proposed models are different neural network types" from a mere description of

"neural network." The Action states that Bro describes that one type is trained and the other is

not. However, Applicants do not find where Bro describes such a scenario. For at least these reasons, claim 35 and its dependent claims, 36-37, are allowable over Bro.

Patentability of New Claims 55-58

Applicants have added claims 55-57, which are computer-readable media claims based on claims 35-37. These claims are allowable for at least the same reasons given for claims 35-37.

Claim 58 mimics claim 3, but uses "means" language. The claim is therefore allowable for at least the same reasons given for claim 3.

Request for Interview

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

Conclusion

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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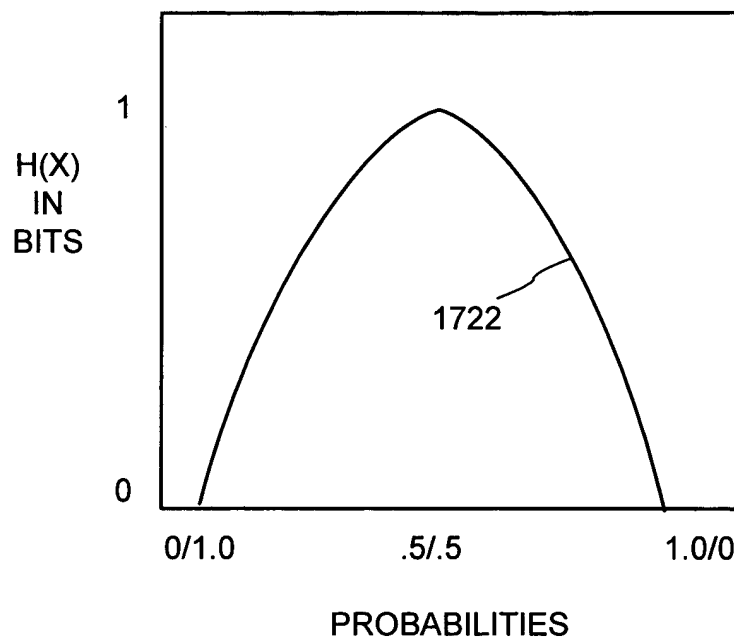Telephone: (503) 226-7391   Gregory L. Maurer
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FIG. 17

1702

PROBABILITIES

PRIOR ART